



RMLL 2009 – Nantes

SWIM

Semantic Web enabled Issue Manager

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« Open source software is creating a global software space, with dependencies between projects, is meshing software from many different sources. But we are not meshing the data about the software! »

Henry Story

Semantic Web evangelist at Sun Microsystems

<http://bbfish.net/work/presentations/2007/BOF-6747.pdf>

« We can create secure open APIs between Bugzillas “porous federated containers” »

Mark Shuttleworth

<http://www.linux-watch.com/news/NS8470376604.html>

▪ Objective

- Ease the search of solutions to technical problems related to open-source software, or of relevant resources

▪ Means

- Semi-automatic semantic collaborative annotation

▪ Context

- Maturity of semantic solutions
- Integration of semantic technologies into the desktop
- Research projects Nepomuk, Helios and Scribo



<http://nepomuk.kde.org>



<http://www.helios-platform.org>

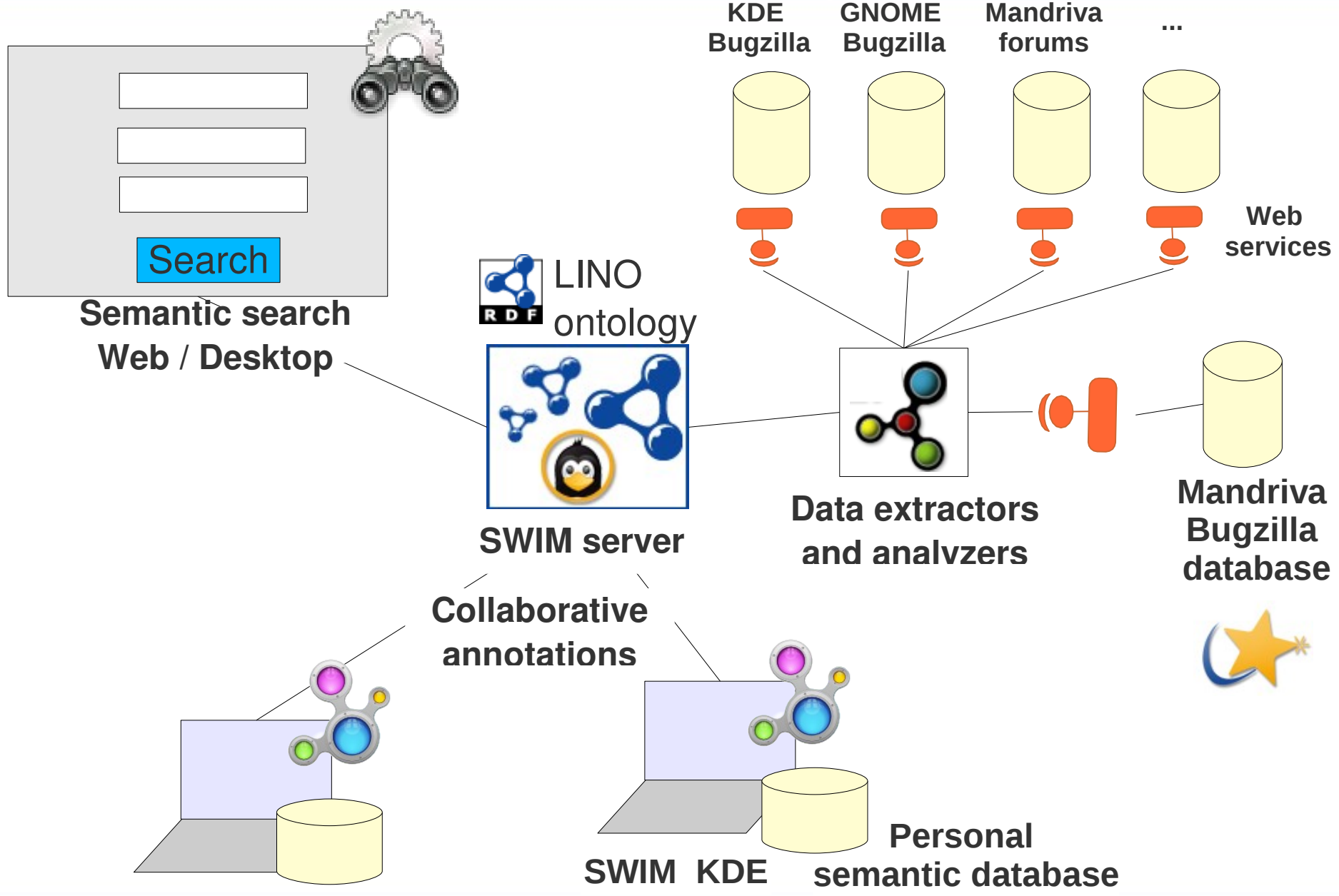


<http://scribo.ws>

- **Get all issues relating to ACPI on ThinkPad T41 running Linux kernel 2.6.29.x and marked as solved**
- **Get all bugs in Mandriva, Debian, Fedora, Mozilla that relate to low-speed USB devices being not detected at boot**

Idea: create a distributed semantic database around OSS
Enrich OSS Web resources with annotations using a set of common ontologies and store the annotations on servers and desktops exposing a query endpoint

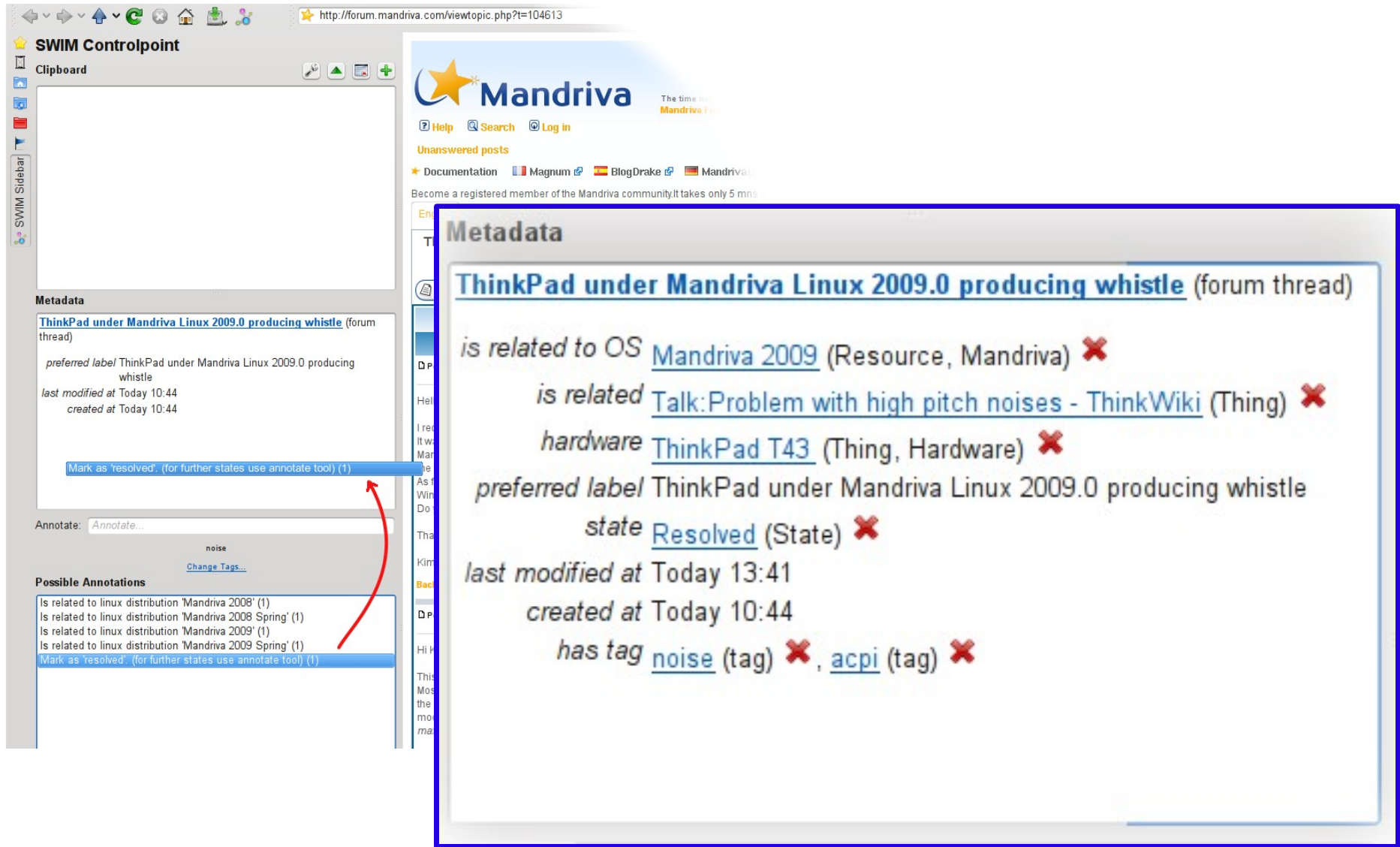
A distributed database of annotations relating to OSS



A set of ontologies

- **For describing software related issues, discussions, specifications etc.**
- **Reusing BOM / EvoOnt, Baetle, DOAP, Hardware4Linux**
- **With main classes and properties:**
 - Issue (relates to software, relates to hardware, ...)
 - Discussion (relates to bug, relates to OS, ...)
 - Software (has categories, has home page, ...)
 - Package (provides software, depends on...)
 - Expert (has trust level, has tags, ...)
 - Hardware (has work level, has driver, ...)
 - Operating system
 - Linux operating system

Combination of manual and automatic annotations



The screenshot shows the KDE SWIM Controlpoint interface. On the left, the 'SWIM Controlpoint' sidebar contains a 'Clipboard' section and a 'Metadata' section. The 'Metadata' section displays the following information for the forum thread 'ThinkPad under Mandriva Linux 2009.0 producing whistle':

- preferred label: ThinkPad under Mandriva Linux 2009.0 producing whistle
- last modified at: Today 10:44
- created at: Today 10:44

Below the metadata, there is an 'Annotate:' field with a dropdown menu showing 'noise' and a 'Change Tags...' button. A 'Possible Annotations' section lists several suggestions, with 'Mark as resolved' selected. A red arrow points from this selection to the 'Mark as resolved' option in the 'Possible Annotations' list.

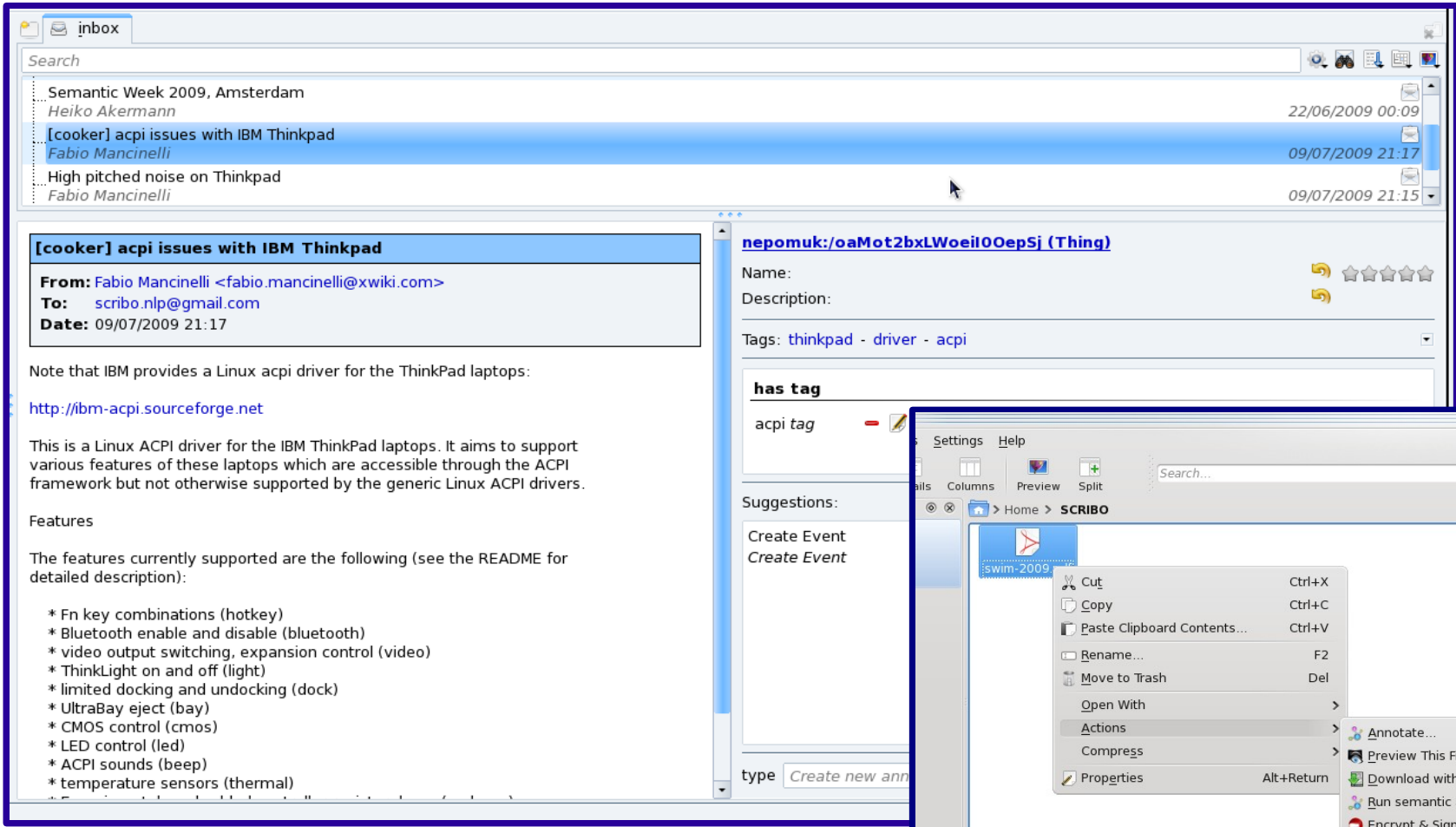
The main content area shows the forum thread 'ThinkPad under Mandriva Linux 2009.0 producing whistle' (forum thread). The thread content is annotated with the following metadata:

- is related to OS [Mandriva 2009](#) (Resource, Mandriva) ✘
- is related [Talk:Problem with high pitch noises - ThinkWiki](#) (Thing) ✘
- hardware [ThinkPad T43](#) (Thing, Hardware) ✘
- preferred label: ThinkPad under Mandriva Linux 2009.0 producing whistle
- state [Resolved](#) (State) ✘
- last modified at: Today 13:41
- created at: Today 10:44
- has tag [noise](#) (tag) ✘, [acpi](#) (tag) ✘

- **Based on natural language processing technologies (INRIA, Proxem)**
- **Identification of “Named Entities”:** software names, hardware component names, etc.
- **Identification of relations**
 - **Suggestion of annotations to the user, who:**
 - **Accepts or rejects them**
 - **Provides feedback to the annotation engines → machine learning**



By harnessing the capabilities of the semantic desktop



In KMail: Linking a mail to an issue, a bug

In Dolphin: annotating a file

Possibility to filter out private annotations (Q3 2009)

Annotations about <http://forum.mandriva.com/viewtopic.php?t=104613>

[Annotate](#) this entry.

Property	Value	Statement author
has type	lino:ForumThread	strueg
has type	rdfs:Resource	strueg
has label	ThinkPad under Mandriva Linux 2009.0 producing whistle	strueg
has state	resolved	strueg
has state		strueg
has related resource	Talk:Problem with high pitch noise - ThinkWiki	strueg
	2009-01-30T10:44:55.000000	strueg
	2009-01-30T15:00:41.000000	strueg
	mandriva 2009.0	strueg
	2009-01-30T13:41:54.000000	strueg
	2009-01-30T15:01:03.000000	strueg
was last modified at	2009-01-30T15:01:20.000000	strueg
relates to hardware	ThinkPad T43	strueg
has tag	nepomuk:/noise	strueg
has tag	nepomuk:/acpi	strueg

Uploading Annotations - Konqueror

Uploading Annotations for 'Problemme Canon lide 25'. This can take a while...

[Background](#)

- Mandriva packages' contents (metadata, files), all versions
- Package test reports
- Package metrics
- Package collaborative descriptions
- Package upgrade issues
- Maintainers information
- Q3 2009: annotations

Mandriva Cooker



Development > **pmd**

pmd-4.2.1-2.0.1mdv2009.1.i586.rpm

Overview Dependencies Scripts Files (97) Changelog Tests

PMD scans Java source code and looks for potential problems like:

- Unused local variables
- Empty catch blocks
- Unused parameters
- Empty 'if' statements
- Duplicate import statements
- Unused private methods
- Classes which could be Singletons
- Short/long variable and method names

PMD has plugins for JDeveloper, JEdit, JBuilder, NetBeans/Sun ONE Studio, IntelliJ IDEA, TextPad, Maven, Ant, Eclipse, Gel, and Emacs.

Annotations about <http://doc4.mandriva.org/users/jweston>

[Annotate this entry.](#)

Property	Value	Statement author
has type	nao:Party	Jim Weston
has label	Jim Weston	Jim Weston
has creator	Jim Weston	Jim Weston
is trusted as	lino:Master	Anna Herzog
is trusted as	lino:Master	Kim
is trusted as	lino:Master	Timothée Béranger
has tag	drivers	Anna Herzog
has tag	drivers	Kim
has tag	drivers	Timothée Béranger
has tag	thinkpad	Timothée Béranger

- **Ontology enhancement**
- **Community involvement**
- **Server implementation on <http://doc4.mandriva.org>**
- **Connectors to: Bugzillas, Sourceforge, Trac, Wikis, Freshmeat, Ohloh, Advogato...**
- **Advanced suggestions: using NLP + social recommendations**
- **UI**
 - **Annotators and annotations visualizers**
 - **Technos: Web / GWT / Qt / Gtk / Eclipse RCP**

Contributions

- **<http://nepomuk.kde.org>**
- **<http://doc4.mandriva.org>**